

Hydrostatic Transmission

Abstract

A hydrostatic transmission comprises a housing whose interior space serves as a fluid sump, a pair of first and second fluid passages disposed in the housing, the pair of first and second fluid passages interposed between the hydraulic pump and the hydraulic motor so as to constitute a closed fluid circuit of an HST. A charge fluid passage is disposed in the housing so as to be connected with each of the first and second fluid passages for supplying fluid from the fluid sump into the closed fluid circuit. A drain fluid passage including an orifice is disposed in the housing so as to be connected with at least one of the first and second fluid passages so that, when hydraulic pressure in the at least one of the first and second fluid passages is increased beyond its neutral level, excessive fluid in the at least one of the first and second fluid passages is drained through the drain fluid passage to the fluid sump, thereby expanding the neutral zone of the HST. The charge fluid passage and the drain fluid passage are open to the fluid sump while the charge fluid passage and the drain fluid passage being separated from each other, thereby preventing the closed fluid circuit from overheating. If a center section, which has a first and second side ends opposite to each other and forms the first and second fluid passages therein, is disposed in the housing, an opening of said charge fluid passage in communication with said fluid sump is disposed toward said first side end of said center section, and an opening of said drain fluid passage in communication with said fluid sump is disposed toward said second side end of said center section.